



Prüf- und Zertifizierungsstelle

ZELM Ex



(1) **EC-TYPE-EXAMINATION CERTIFICATE**  
(Translation)

(2) Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-TYPE-EXAMINATION CERTIFICATE Number:

**ZELM 02 ATEX 0081**

(4) Equipment: **2600T Series Pressure Transmitters, HART 4...20 mA**

(5) Manufacturer: **ABB Instrumentation spa**

(6) Address: **Via Statale 113, 22016 Lenno (Como), Italy**

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report ZELM Ex 0360117114.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50 014: 1997+A1+A2**  
**EN 50 281-1-1: 1998**

**EN 50 020: 1994**  
**EN 1127-1: 1997**

**EN 50 284: 1999**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

(12) The marking of the equipment shall include the following:



**II 1 GD T 50°C EEx ia IIC T6 resp. II 1 GD T 95°C EEx ia IIC T4**  
**or**  
**II 1/2 GD T 50°C EEx ia IIC T6 resp. II 1/2 GD T 95°C EEx ia IIC T4**

Zertifizierungsstelle **ZELM Ex**

  
Dipl.-Ing. Harald Zelm



Braunschweig, April 25, 2002

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## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 02 ATEX 0081**

(15) Description of equipment

The 2600T series Pressure Transmitters is used for measurement and conversion of the physical quantities pressure above atmospheric and differential pressure absolute pressure into an analogous electrical standard signal of a 4 ... 20 mA current loop and digital communication according to the HART protocol in the hazardous area.

The attached pressure works on the ceramic measuring sensor or the silicon measuring sensor.

The Pressure Transmitter is mounted into a housing meeting the degree of protection  $\geq$  IP 65 according to EN 60529:1991 – for dust including the cable entry fittings.

The Pressure Transmitter is allowed to be directly installed into the hazardous area of category 1G resp. 1D or into the separation wall between the hazardous areas of category 1G or 1D and category 2G or 2D.

The operating conditions for service with flammable measuring mixtures – which are non-explosive - and higher pressures are to be taken from the instruction manual and operation manual respectively.

The Pressure Transmitter may optionally be fitted with digital or analogue meters for which a separate EC-type Examination Certificate has been issued.

The maximum permissible ambient temperature is  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$ .

The model code will be:

**type 262.. / 264..**

Instead of the points of the model code other letter- or numeral- combinations will be stated, which are describing several variations and versions of the equipment.

### Electrical data

Supply and  
signal circuit  
(terminals signal +,-)

type of protection Intrinsic Safety EEx ib IIC or EEx ia IIC  
for connection to supply units with intrinsically safe circuits "ia" and  
**II 1 GD T 50°C EEx ia IIC T6 resp. II 1 GD T 95°C EEx ia IIC T4**  
or  
for connection to supply units with intrinsically safe circuits "ib" or "ia"  
and **II 1/2 GD T 50°C EEx ib or ia IIC T6** respectively  
**II 1/2 GD T 95°C EEx ib or ia IIC T4**

maximum values:

$$U_i = 30 \text{ V}$$

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature	max. $I_i$ [mA]	max. $P_i$ [W]
T4 resp. T 95 °C	- 40 °C	+ 85 °C	100	0,75
T4 resp. T 95 °C	- 40 °C	+ 70 °C	160	1
T5 resp. T 95 °C	- 40 °C	+ 40 °C	100	0,75
T6 resp. T 50 °C	- 40 °C	+ 40 °C	50	0,4

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Prüf- und Zertifizierungsstelle

ZELM Ex



**Schedule to EC-TYPE-EXAMINATION CERTIFICATE\_ZELM 02 ATEX 0081**

effective internal capacitance	is negligibly small resp. $C_i = 13 \text{ nF}$ with output meter
effective internal inductance	is negligibly small resp. $L_i = 0,22 \text{ mH}$ with output meter
Degree of protection	at least IP 65 according to EN 60529:1991

References:

The instruction manual has to be considered, in particular the maximum thickness of dust layers permitted for the hazardous area of category 1D and the sufficient equipotential bonding and grounding and the overvoltage protection.

For the use in dust atmosphere the degree of protection  $\geq \text{IP 65}$  must be ensured in regard to the enclosure and the cable entry fitting.

Having the capacitive measuring element type 26.A. or 26.G. ( $\leq 400 \text{ mbar}$ ) and a supply with an intrinsically safe circuit EEx ib IIC the use is not permitted for category 1GD or 1/2 GD respectively.

(16) Report No.

ZELM Ex 0360117114

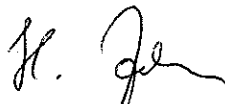
(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle ZELM Ex

  
Dipl.-Ing. Harald Zelm



Braunschweig, April 25, 2002



**Prüf- und Zertifizierungsstelle**  
**ZELM Ex**



## 1. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

**to EC-type-examination Certificate**

**ZELM 02 ATEX 0081**

Equipment: **2600T Series Pressure Transmitters, HART 4...20 mA**  
Manufacturer: **ABB SACE SpA.**  
Address: **Via Statale 113, 22016 Lenno (Como), Italien**

### Description of supplement

The 1. Supplement to EC-type-examination Certificate was necessary concerning the change of the circuit design and the change of the manufacturers name. The derating of safety-relevant components and the spacing requirements in accordance with EN 50020 remain unchanged.

The type of protection, the electrical data and all further data remain unchanged.

The 2600T Series Pressure Transmitters, HART 4...20 mA may be manufactured in future in accordance with this supplement.

### References:

The instruction manual has to be observed.

### Report No.

ZELM Ex 0610317193

### Special conditions for safe use

not applicable

### Essential Health and Safety Requirements

met by adherence to the standards

**EN 50 014: 1997+A1+A2**  
**EN 50281-1-1:1998**

**EN 50 020: 1994**  
**EN 1127-1:1997**

**EN 50 284: 1999**

Zertifizierungsstelle **ZELM Ex**

  
Dipl.-Ing. Harald Zelm



Braunschweig, August 01, 2003

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EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. This English version is based on the German text. In the case of dispute, the German text shall prevail.

Prüf- und Zertifizierungsstelle ZELM Ex • Siekgraben 56 • D-38124 Braunschweig



# Prüf- und Zertifizierungsstelle ZELM Ex



## 2. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)  
to EC-type-examination Certificate

**ZELM 02 ATEX 0081**

Equipment: **2600T Series Pressure Transmitters, HART 4...20 mA**  
Manufacturer: **ABB SACE SpA.**  
Address: **Via Statale 113, 22016 Lenno (Como), Italien**

### Description of supplement

The 2. Supplement to EC-type-examination Certificate was necessary concerning changes of the circuit design. Furthermore the equipment is extended by an optional version of the housing cover. The explosion protection is not affected by these changes.

The type of protection, the electrical data and all further data remain unchanged and also apply to this 2. Supplement.

The 2600T Series Pressure Transmitter HART may be manufactured in future in consideration of this Supplement.

### References:

The instruction manual has to be observed.

### Report No.

ZELM Ex 1260417336

### Special conditions for safe use

not applicable

### Essential Health and Safety Requirements

met by adherence to the standards

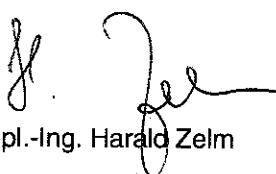
**EN 50 014: 1997+A1+A2**  
**EN 50281-1-1:1998**

**EN 50 020: 1994**  
**EN 1127-1:1997**

**EN 50 284: 1999**

Zertifizierungsstelle **ZELM Ex**

Braunschweig, April 19, 2005

  
Dipl.-Ing. Harald Zelm



### 3. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

# ZELM ex

## to EC-type-examination Certificate

### ZELM 02 ATEX 0081

Equipment: **2600T Series Pressure Transmitters, HART 4...20 mA**

Manufacturer: **ABB SpA.**

Address: **Via Statale 113, 22016 Lenno (Como), Italien**

#### Description of supplement

Within the scope of the 3. Supplement to the EC-Type-Examination certificate ZELM 02 ATEX 0081 changes in the internal construction and the compliance to the current standards was checked.

The 2600T Series Pressure Transmitter, HART 4...20 mA may be manufactured in future also under consideration of these 3. Supplement.

The marking changes as follows:



**II 1 G Ex ia IIC T4 - T6 and**  
**II 1/2 G Ex ia IIC T4 - T6 and**  
**II 1 D Ex iaD 20 T50°C resp. T95°C and**  
**II 1/2 D Ex iaD 21 T50°C resp. T95°C**

The electrical data changes as follows:

Supply- and  
Signal circuit  
(terminals signal +,-)

type of protection Intrinsic Safety Ex ia IIC resp. Ex ib IIC  
for connection to a power supply with intrinsically safe circuits „ia“ and  
**II 1 G Ex ia IIC T6 resp. II 1 D Ex iaD A20 T95°C**  
or  
for connection to a power supply with intrinsically safe circuits „ia“ or „ib“  
and **II 1/2 G Ex ia resp. ib IIC T6 resp.**  
**II 1/2 D Ex iaD resp. ibD A21 T95°C**

and following maximum values:  $U_i = 30 \text{ V}$

temperature class	lower ambient temperature limit	upper ambient temperature limit	max. $I_i$ [mA]	max. $P_i$ [W]
T4 bzw. T 95 °C	- 40 °C	+ 85 °C	100	0,75
T4 bzw. T 95 °C	- 40 °C	+ 70 °C	160	1
T5 bzw. T 95 °C	- 40 °C	+ 40 °C	100	0,75
T6 bzw. T 50 °C	- 40 °C	+ 40 °C	50	0,4

effective internal capacitance

is negligibly small  
resp.  $C_i = 13 \text{ nF}$  with output meter

effective internal inductance

is negligibly small  
resp.  $L_i = 0,22 \text{ mH}$  with output meter

**3. Supplement  
to EC-type-examination Certificate ZELM 02 ATEX 0081**

**ZELM ex**

References:

The instruction manual has to be considered, in particular the maximum thickness of dust layers permitted for the hazardous area of category 1D and the sufficient equipotential bonding and grounding and the overvoltage protection.

For the use in dust atmosphere the degree of protection  $\geq$  IP 65 must be ensured in regard to the enclosure and the cable entry fitting.

Having the capacitive measuring element type 26.A. or 26.G. ( $\leq$  400 mbar) and a supply with an intrinsically safe circuit EEx ib IIC the use is not permitted for category 1GD or 1/2 GD respectively.

Report No.

ZELM Ex 1810919762

Essential Health and Safety Requirements

Within the scope of this 3. Supplement the agreement of the device with the current standards has been checked.

The essential health and safety requirements are still fulfilled by compliance with the following Standards:

EN 1127-1:2008  
EN 60079-26:2007

EN 60079-0:2009  
EN 61241-0:2006

EN 60079-11:2007  
EN 61241-11:2006

**ZELM ex**

**Zertifizierungs-  
stelle**

Braunschweig, August 24, 2010



**Zertifizierungsstelle ZELM ex  
Dipl.-Ing. Harald Zelm**

**ZELM  
ex**

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Siekgraben 56 · D-38124 Braunschweig